

Consulting  
Engineers and  
Scientists

December 19, 2021  
Project 2103683

Mr. Eric Kovatch  
WEC Energy Group – Business Services  
333 W. Everett Street, A231  
Milwaukee, Wisconsin 53203

**Re: 2022 Landfill Inspection Report  
We Energies Presque Isle Power Plant Landfill No. 3  
Marquette Township, Michigan**

Dear Mr. Kovatch:

GEI Consultants of Michigan, P.C. (GEI) is pleased to provide this landfill inspection report for the We Energies Presque Isle Power Plant (PIPP) Landfill No. 3. The inspection was completed to comply with *40 CFR 257 Subpart D – Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments* and specifically with *§ 257.84(b) Annual inspections by a qualified professional engineer*.

***§ 257.84 Inspection Requirements for CCR Landfills***

*(b) Annual inspections by a qualified professional engineer.*

(1) Existing and new CCR landfills and any lateral expansion of a CCR landfill must be inspected on a periodic basis by a qualified professional engineer to ensure that the design, construction, operation, and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering standards. The inspection must, at a minimum, include:

- (i) A review of available information regarding the status and condition of the CCR unit, including, but not limited to, files available in the operating record (e.g., the results of inspections by a qualified person and results of previous annual inspections); and
- (ii) A visual inspection of the CCR unit to identify signs of distress or malfunction of the CCR unit.

(2) *Inspection report.* The qualified professional engineer must prepare a report following each inspection that addresses the following:

- (i) Any changes in geometry of the structure since the previous annual inspection;
- (ii) The approximate volume of CCR contained in the unit at the time of the inspection;
- (iii) Any appearances of an actual or potential structural weakness of the CCR unit, in addition to any existing conditions that are disrupting or have the potential to disrupt the operation and safety of the CCR unit; and
- (iv) Any other change(s) which may have affected the stability or operation of the CCR unit since the previous annual inspection.

## Background

The landfill is located in the NW 1/2 of the SE 1/4 of Section 6, Township 48 North, Range 25 West, approximately 4 miles west of the power plant in Marquette Township, Marquette County, Michigan. The landfill is permitted by the Michigan Department of Environmental Quality (MDEQ) under Construction Permit No. 0400 dated February 27, 2002, and the current Operating License. Figure 1 – Site Location Figure, shows the location of the landfill relative to the power plant and the City of Marquette, Michigan.

Cell 1 of Landfill No. 3 was constructed in the 2003 construction season and placed into service on October 8, 2005. Cell 2 was constructed during the 2007 construction season and placed into service on October 10, 2008. The perimeter slopes of Cell 1 were closed in 2014 and the remainder of the landfill was closed in 2019. With the issuance of the Cell 2 closure construction documentation report approval from the Michigan Department of Environment, Great Lakes, and Energy on October 21, 2019, PIPP Landfill No. 3 began the 30-year post-closure care period.

GEI was retained to perform an annual inspection of the landfill in compliance with § 257.84(b) *Annual inspections by a qualified professional engineer*. The inspection was performed on November 3, 2022. Copies of the site location figure, landfill inspection forms, and inspection photo log are appended to this letter-report and constitute the entirety of the report.

## Site Inspections

The landfill site inspection was performed on November 3, 2022. The inspection included a meeting with landfill operation personnel to discuss the daily operation of the facility including leachate hauling, operation of the leachate collection and removal system, and stormwater management; review of the leachate hauling and landfill operating records; observation of the existing site conditions including the access road and cell entrance, and the Landfill 3 final cover slopes.

Based on review of the site and discussions with the landfill operation personnel, post-closure landfill operations are running smoothly and consistently. Leachate hauling has been consistent with operators generally keeping the volume in the tank under 30,000 gallons. Leachate levels in the sumps are being maintained with less than 1-foot of head on the liner. We Energies began transporting and disposing of leachate at the Marquette Area Wastewater Treatment Facility on April 23, 2019.

Following the meeting with the operation personnel, GEI performed a site walk and inspected the landfill. Overall, the landfill is in very good condition. The perimeter slopes of Cell 1 closed in 2014 and the Cell 2 perimeter slopes closed in 2019 are in good condition. The vegetation appeared to be well established with no observed bare spots, no significant erosion, no woody vegetation, no animal burrows, no signs of differential settlement, and no areas of instability.

The We Energies Landfill No. 3 is a double lined landfill with a primary leachate collection system and secondary leachate detection system. The leachate collection system is a network of perforated collection pipes running east-west across the landfill within a 12-inch sand drainage layer. The pipes drain to the leachate collection sumps along the east perimeter berm of the landfill. The sump in Cell 2 gravity drains to the sump in Cell 1 where it is extracted by sump pumps installed in sideslope riser pipes. The sump in Cell 1 has two extraction pumps that are individually controlled by pressure transducers installed inside each side slope riser pipe. The pumps are powered on when the leachate head level in the side slope riser reaches 36 inches and power off when the level reaches 18 inches. In the event of a pump failure a high-level alarm is

activated when the sump level reaches 54 inches of leachate head. In accordance with Part 115, Solid Waste Management of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended, We Energies is obligated to maintain the leachate head level to less than 12 inches on the landfill liner system, excluding the sump area. The leachate head level in the sump would need to be 62.4 inches of head in the sump to reach 12 inches at any location on the landfill liner system.

The leak detection system consists of a geocomposite drainage layer between the primary composite liner system and a secondary geomembrane liner. A secondary sump with a side slope riser pipe and leachate extraction pump is installed in each cell. Head level in the primary and secondary sumps are included on the inspection forms.

### Closing


On November 3, 2022, the annual inspection of the We Energies Landfill No. 3 was completed in compliance with § 257.84(b) *Annual inspections by a qualified professional engineer*. Overall, the landfill is in good condition. The leachate system is functioning as designed and the landfill operators are keeping up with leachate hauling. Based on my observations and discussions with the landfill personnel the landfill is being operated in accordance with Construction Permit No. 0400 dated February 27, 2002; the current Operating License; the requirements of Part 115, Solid Waste Management of the Natural Resources and Environmental Protection Act, 1994 PA 451, as amended; and 40 CFR 257 Subpart D – Standards for the Disposal of Coal Combustion Residuals in Landfills and Surface Impoundments.


The inspection was completed by John M. Trast, P.E. I am a licensed professional engineer in the State of Michigan in accordance with Article 20 of the Occupational Code, Public Act 299 of 1980, as amended. This document has been prepared in accordance with the Michigan Administrative Rules, Department of Licensing and Regulatory Affairs, Professional Engineers – General Rules, Part 3 – Standards of Practice and Professional Conduct; and that, to the best of my knowledge, all information contained in this document is correct and the document was prepared in compliance with all applicable requirements of Part 115 of PA 451, as amended and 40 CFR 257.

If you have any questions regarding this landfill inspection, please contact me at 920-455-8299.

Sincerely,

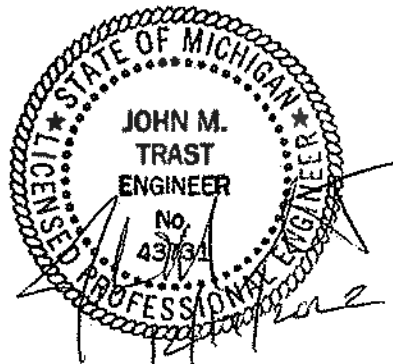
GEI CONSULTANTS OF MICHIGAN, P.C.

  
William Butler, P.E.  
Senior Geotechnical Engineer

  
John M. Trast, P.E. D.GE  
Vice President

### Attachments:

- Figure 1 - Site Location
- Landfill Inspection Photo Log
- Landfill Inspection Form 11/3/2022





WE ENERGIES  
MARQUETTE, MICHIGAN



PRESQUE ISLE POWER PLANT  
LANDFILL #3  
SITE LOCATION FIGURE

Project 1610536

November 17, 2016

Fig. 1

# Photographic Log



**Project:** We Energies Presque Isle Power Plant Landfill Inspection  
**Client:** WEC Energy Group

**GEI Proj. No.:** 2103683

<b>PHOTOGRAPH NO: 1</b>	<b>DATE:</b> November 3, 2022	<b>LATITUDE:</b> 46.5849905853034	<b>LONGITUDE:</b> -87.4715840203953
<b>SITE LOCATION:</b> PRESQUE ISLE, MARQUETTE TOWNSHIP, MICHIGAN			
<b>DESCRIPTION:</b>  Pump master board readings			
<b>PHOTO BY:</b>  BILL BUTLER			


<b>PHOTOGRAPH NO: 2</b>	<b>DATE:</b> November 3, 2022	<b>LATITUDE:</b> 46.5849842631429	<b>LONGITUDE:</b> -87.4715453588322
<b>SITE LOCATION:</b> PRESQUE ISLE, MARQUETTE TOWNSHIP, MICHIGAN			
<b>DESCRIPTION:</b>  Primary leachate pump #1-2			
<b>PHOTO BY:</b>  BILL BUTLER			

# Photographic Log



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**Client:** WEC Energy Group

**GEI Proj. No.:** 2103683

<b>PHOTOGRAPH NO: 3</b>	<b>DATE:</b> November 3, 2022	<b>LATITUDE:</b> 46.5844632790012	<b>LONGITUDE:</b> -87.4715185981357
<b>SITE LOCATION:</b> PRESQUE ISLE, MARQUETTE TOWNSHIP, MICHIGAN			
<b>DESCRIPTION:</b>  Cell 2 Riser Vault Building			
<b>PHOTO BY:</b>  BILL BUTLER			

<b>PHOTOGRAPH NO: 4</b>	<b>DATE:</b> November 3, 2022	<b>LATITUDE:</b> 46.5844516558167	<b>LONGITUDE:</b> -87.4716504993057
<b>SITE LOCATION:</b> PRESQUE ISLE, MARQUETTE TOWNSHIP, MICHIGAN			
<b>DESCRIPTION:</b>  Secondary leachate level Cell 2 Pump #4-1			
<b>PHOTO BY:</b>  BILL BUTLER			


# Photographic Log



**Project:** We Energies Presque Isle Power Plant Landfill Inspection  
**Client:** WEC Energy Group

**GEI Proj. No.:** 2103683

<b>PHOTOGRAPH NO: 5</b>	<b>DATE:</b> November 3, 2022	<b>LATITUDE:</b> 46.584671995123	<b>LONGITUDE:</b> -87.4714521067808
<b>SITE LOCATION:</b> PRESQUE ISLE, MARQUETTE TOWNSHIP, MICHIGAN			
<b>DESCRIPTION:</b>  Cell 1 Leachate Vault			
<b>PHOTO BY:</b>  BILL BUTLER			



<b>PHOTOGRAPH NO: 6</b>	<b>DATE:</b> November 3, 2022	<b>LATITUDE:</b> 46.5857106515525	<b>LONGITUDE:</b> -87.4700236162765
<b>SITE LOCATION:</b> PRESQUE ISLE, MARQUETTE TOWNSHIP, MICHIGAN			
<b>DESCRIPTION:</b>  Loadout station L/F 3			
<b>PHOTO BY:</b>  BILL BUTLER			

# Photographic Log



**Project:** We Energies Presque Isle Power Plant Landfill Inspection  
**Client:** WEC Energy Group

**GEI Proj. No.:** 2103683

<b>PHOTOGRAPH No: 7</b>	<b>DATE:</b> November 3, 2022	<b>LATITUDE:</b> 46.5857131655214	<b>LONGITUDE:</b> -87.4699749839758
<b>SITE LOCATION:</b> PRESQUE ISLE, MARQUETTE TOWNSHIP, MICHIGAN			
<b>DESCRIPTION:</b>  Photo No. 8			
<b>PHOTO BY:</b>  BILL BUTLER			
<b>PHOTOGRAPH No: 8</b>	<b>DATE:</b> November 3, 2022	<b>LATITUDE:</b> 46.5857964190534	<b>LONGITUDE:</b> -87.4700132382054
<b>SITE LOCATION:</b> PRESQUE ISLE, MARQUETTE TOWNSHIP, MICHIGAN			
<b>DESCRIPTION:</b>  Leachate loadout building			
<b>PHOTO BY:</b>  BILL BUTLER			





# Photographic Log



**Project:** We Energies Presque Isle Power Plant Landfill Inspection  
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**GEI Proj. No.:** 2103683


PHOTOGRAPH No: 9	DATE: November 3, 2022	LATITUDE: 46.5846299567449	LONGITUDE: -87.474458073161
<b>SITE LOCATION:</b> PRESQUE ISLE, MARQUETTE TOWNSHIP, MICHIGAN			
<b>DESCRIPTION:</b>  Cover erosion control berms			
<b>PHOTO BY:</b>  BILL BUTLER			
PHOTOGRAPH No: 10	DATE: November 3, 2022	LATITUDE: 46.5846185413905	LONGITUDE: -87.4745029428592
<b>SITE LOCATION:</b> PRESQUE ISLE, MARQUETTE TOWNSHIP, MICHIGAN			
<b>DESCRIPTION:</b>  North slope erosion repair area			
<b>PHOTO BY:</b>  BILL BUTLER			

# Photographic Log



**Project:** We Energies Presque Isle Power Plant Landfill Inspection  
**Client:** WEC Energy Group

**GEI Proj. No.:** 2103683

<b>PHOTOGRAPH No: 11</b>	<b>DATE:</b> November 3, 2022	<b>LATITUDE:</b> 46.5847195337031	<b>LONGITUDE:</b> -87.4747668821404
<b>SITE LOCATION:</b> PRESQUE ISLE, MARQUETTE TOWNSHIP, MICHIGAN			
<b>DESCRIPTION:</b>  L/F 3 crest good vegetation			
<b>PHOTO BY:</b>  BILL BUTLER			
<b>PHOTOGRAPH No: 12</b>	<b>DATE:</b> November 3, 2022	<b>LATITUDE:</b> 46.5845593325586	<b>LONGITUDE:</b> -87.475827090244
<b>SITE LOCATION:</b> PRESQUE ISLE, MARQUETTE TOWNSHIP, MICHIGAN			
<b>DESCRIPTION:</b>  L/F 3 west slope			
<b>PHOTO BY:</b>  BILL BUTLER			

# Photographic Log



**Project:** We Energies Presque Isle Power Plant Landfill Inspection  
**Client:** WEC Energy Group

**GEI Proj. No.:** 2103683



PHOTOGRAPH No: 13	DATE: November 3, 2022	LATITUDE: 46.584442987281	LONGITUDE: -87.4757472937121
<b>SITE LOCATION:</b> PRESQUE ISLE, MARQUETTE TOWNSHIP, MICHIGAN			
<b>DESCRIPTION:</b>  Leachate cleanout			
<b>PHOTO BY:</b>  BILL BUTLER			
PHOTOGRAPH No: 14	DATE: November 3, 2022	LATITUDE: 46.5845650569989	LONGITUDE: -87.4758225386824
<b>SITE LOCATION:</b> PRESQUE ISLE, MARQUETTE TOWNSHIP, MICHIGAN			
<b>DESCRIPTION:</b>  L/F 3 north slope			
<b>PHOTO BY:</b>  BILL BUTLER			

# Photographic Log



**Project:** We Energies Presque Isle Power Plant Landfill Inspection  
**Client:** WEC Energy Group

**GEI Proj. No.:** 2103683



<b>PHOTOGRAPH No: 15</b>	<b>DATE:</b> November 3, 2022	<b>LATITUDE:</b> 46.5857062346019	<b>LONGITUDE:</b> -87.4716494688739
<b>SITE LOCATION:</b> PRESQUE ISLE, MARQUETTE TOWNSHIP, MICHIGAN			
<b>DESCRIPTION:</b>  L/F 3 east slope			
<b>PHOTO BY:</b>  BILL BUTLER			
<b>PHOTOGRAPH No: 16</b>	<b>DATE:</b> November 3, 2022	<b>LATITUDE:</b> 46.5857062346019	<b>LONGITUDE:</b> -87.4716494688739
<b>SITE LOCATION:</b> PRESQUE ISLE, MARQUETTE TOWNSHIP, MICHIGAN			
<b>DESCRIPTION:</b>  L/F 3 Looking Northwest			
<b>PHOTO BY:</b>  BILL BUTLER			

# Photographic Log



**Project:** We Energies Presque Isle Power Plant Landfill Inspection  
**Client:** WEC Energy Group

**GEI Proj. No.:** 2103683

<b>PHOTOGRAPH No: 17</b>	<b>DATE:</b> November 3, 2022	<b>LATITUDE:</b> 46.5857062346019	<b>LONGITUDE:</b> -87.4716494688739
<b>SITE LOCATION:</b> PRESQUE ISLE, MARQUETTE TOWNSHIP, MICHIGAN			
<b>DESCRIPTION:</b>  L/F 3 Looking Southeast			
<b>PHOTOGRAPH No: 18</b>	<b>DATE:</b> November 3, 2022	<b>LATITUDE:</b> 46.5857062346019	<b>LONGITUDE:</b> -87.4716494688739
<b>SITE LOCATION:</b> PRESQUE ISLE, MARQUETTE TOWNSHIP, MICHIGAN			
<b>DESCRIPTION:</b>  L/F 3 Looking Northeast			

**PIPP ASH LANDFILL #3 - ANNUAL INSPECTION**

**INSPECTOR:** John M. Trast, P.E.

**INSPECTION DATE/TIME:** 11/3/2022

**WEATHER:**

Temperature: 40's  
Conditions: Sunny  
Wind: Moderate  
Wind Direction: W  
Precipitation: None

**LEACHATE COLLECTION SYSTEM:**

**Load-out Facility:**

High level alarms: No  
Low level alarms: No  
Leak alarms: No  
Tank Level : ---  
Tank Volume: 43430 gallons  
Pump: Available  
Pad Condition: Good

**Sump:**

Pump #1-1: Available 21.5 in Primary LCS Sump  
Pump #1-2: Available 31.3 in Primary LCS Sump  
Pump #2-1: Available 21.9 in Cell 1 Secondary  
Pump #4-1: Available 26.1 in Cell 2 Secondary  
Control Panel: Available

Note: 62.4" in P1-1 or P1-2 equates to 12" of head on base liner

Comments: Leachate volume in the tank is being managed by the operators to generally keep the volume less than 30,000 gallons (total capacity is 100,000 gallons). Leachate levels in the sumps are being maintained in compliance with the operating license requirements (no alarms) of less than 1-foot of head on the liner.

**STABILITY/EROSION OF FINAL COVERS & WASTE SLOPES:**

Final Covers:

Waste Slopes:

Comments : The final cover slopes appear stable with no observed instability, no significant erosion, no woody vegetation, no animal burrows, or concerns regarding the final cover slopes. Everything appeared to be in good condition with no observed instability or significant erosion.

**Note: Check mark indicates slope appears stable and no significant erosion.**

**LANDFILL OPERATIONS:**

**Fugitive Dust Control:**

Tracking Pads:

Cattle Guards:

Access Road Clean:

Landfill Surfaces Vegetated:

Airbourne Dust Visible: No

Sign of Recent Dust Deposition: No

**Stormwater Management**

Exterior Ditches:

Interior Ditches:

Catch Basin:

Culverts:

Comments: The landfill was permanently closed upon receipt of the construction documentation report approval from the Michigan Department of Environment, Great Lakes, and Energy (EGLE) on October 21, 2019, beginning the 30-year post closure care period.

**Note: Check mark indicates that the features are acceptable.**